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CLAIMS

What is claimed is:

- 1. A method of treating acute renal failure in a subject, said method comprising the step of administering an effective amount of a composition comprising a an ester of a 2-ketoalkanoic acid or an amide of a 2-ketoalkanoic acid.
- 2. The method of Claim 1 wherein the composition comprises an alkyl, aralkyl, alkoxyalkyl or carboxyalkyl ester of a 2-ketoalkanoic acid dissolved in a pharmaceutically acceptable carrier vehicle.
- 3. The method of Claim 2 wherein the composition comprises an enolization agent.
- 10 4. The method of Claim 3 wherein the enolization agent is a pharmaceutically acceptable inorganic, divalent cation.
 - 5. The method of Claim 1 wherein the composition comprises an ethyl, propyl, butyl, carboxymethyl, acetoxymethyl, carbethoxymethyl or ethoxymethyl ester of a 2-keto-butyrate, 2-ketopentanoate, 2-keto-3-methyl-butyrate, 2-keto-4-methyl-pentanoate or 2-keto-hexanoate.
 - 6. The method of Claim 2 wherein the subject is being treated prophylactically for acute renal failure.
 - 7. The method of Claim 6 wherein the subject is at risk for developing acute renal failure.

- 8. The method of Claim 7 wherein the subject has at least two risk factors for developing acute renal failure.
- 9. The method of Claim 7 wherein the subject has at least three risk factors for developing acute renal failure.
- 5 10. The method of Claim 8 wherein the subject is undergoing contrast imaging.
 - 11. The method of Claim 8 wherein the subject has pre-existing renal disease/dysfunction.
 - 12. The method of Claim 8 wherein the subject is diabetic.
- 13. The method of Claim 8 wherein the subject is being treated with nephrotoxicdrugs.
 - 14. The method of Claim 8 wherein the subject is being treated for hypotension.
 - 15. The method of Claim 8 wherein the subject is being treated for hemorrhagic shock, systemic inflammation or sepsis.
- The method of Claim 8 wherein the subject is experiencing or likely to
 experience disruption of renal blood flow.
 - 17. The method of Claim 16 wherein the disruption of blood flow is due to surgery.
 - 18. The method of Claim 8 wherein the subject is experiencing liver failure or heart failure.

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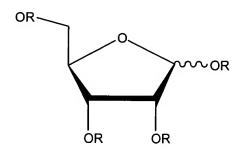
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- 19. The method of Claim 1 wherein the composition comprises pyruvamide.
- 20. The method of Claim 2 wherein the composition comprises an ester of pyruvate.
- 21. A method of treating acute renal failure in a subject, said method comprising the step of administering an effective amount of a composition comprising ethyl pyruvate.
- 22. The method of Claim 21 wherein the subject is being treated prophylactically for acute renal failure.
- 23. A method of prophylactically treating acute renal failure in a subject undergoing contrast imaging, said method comprising the step of administering an effective amount of a composition comprising an alkyl, aralkyl, alkoxyalkyl or carboxyalkyl ester of a 2-ketoalkanoic acid dissolved in a pharmaceutically acceptable carrier vehicle.
 - 24. A method of prophylactically treating acute renal failure in a subject undergoing contrast imaging, said method comprising the step of administering an effective amount of ethyl pyruvate.
 - 25. The method of Claim 24 wherein the ethyl pyruvate is administered in a solution comprising between 0.1 M and 0.2 M lactate.
 - 26. The method of Claim 24 wherein the ethyl pyruvate is administered in a solution comprising between 105 mM and 110 mM NaCl and between 3.8 mM and 4.2 mM KCl.

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- 27. The method of Claim 1, wherein the subject is administered an ester of a 2-ketoalkanoic acid and wherein said ester is a glyceryl ester.
- 28. The method of Claim 1, wherein said the subject is administered an ester of a 2-ketoalkanoic acid and wherein said ester is a ribosyl ester represented by the following formula:



wherein each R is independently H, a 2-ketoalkanoate group or a C1-C3 acyl and at least one R is an 2-ketoalkanoate group.

The method of Claim 1, wherein the subject is administered an ester of a

2-ketoalkanoic acid and wherein said ester is a glucosyl ester described by formulae (I) or (II):

wherein each R is independently H, a 2-ketoalkanoate group or a C1-C3 acyl and at least one R is a 2-ketoalkanoate group.

30. The method of Claim 1, wherein the subject is administered an ester of a 2-ketoalkanoic acid and wherein said ester is a dihydroxyacetone ester.